

CLAIMS

1. An interference signal canceling apparatus comprising:

a correlation value calculator for calculating a correlation value per symbol for each of symbol rates that becomes candidates of a specified symbol rate with respect to a received signal of the specified symbol rate;

a decider for deciding a symbol rate of the received signal based on a plurality of obtained correlation values; and

a generator for generating a replica signal by providing the decided signal with spreading processing with a spreading code corresponding to the decided symbol rate.

2. The interference signal canceling apparatus according to claim 1, wherein

said decider decides the symbol rate of the top symbol of a frame.

3. The interference signal canceling apparatus according to claim 1, wherein

said correlation value calculator calculates the correlation value per symbol for each of the symbol rates that becomes the candidates, by despread the received signal with a known spreading code corresponding to one symbol of the symbol rate that becomes the candidate.

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4. The interference signal canceling apparatus according to claim 1, wherein,

where the received signal per symbol is spread with
5 a second spreading code for which the first spreading code corresponding to the highest symbol rate of the symbol rates that become the candidates are repeated,

said correlation value calculator calculates the correlation value per symbol for each of the symbol rates
10 that becomes the candidates, by combining the results of despreading after despreading the received signal with the first spreading code.

5. The interference signal canceling apparatus
15 according to claim 1, wherein

said decider decides the symbol rate of the received signal on the basis of a correlation value that becomes the maximum among a plurality of correlation values.

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6. The interference signal canceling apparatus according to claim 5, wherein

said decider decides the symbol rate of the received signal on the basis of a correlation value that
25 becomes higher than a threshold value obtained by a correlation value of a control signal among a plurality of correlation values.

7. The interference signal canceling apparatus according to claim 1, further comprising

an averager for averaging a plurality of
5 correlation values in a predetermined interval, wherein
said decider decides the symbol rate of the
received signal on the basis of the averaged correlation
value.

10 8. A mobile station apparatus having an interference
signal canceling apparatus, said interference signal
canceling apparatus comprising:

a correlation value calculator for calculating a
correlation value per symbol for each of symbol rates
15 that becomes candidates of a specified symbol rate with
respect to a received signal of the specified symbol rate;
a decider for deciding a symbol rate of the received
signal based on a plurality of obtained correlation
values; and

20 a generator for generating a replica signal by
providing the decided signal with spreading processing
with a spreading code corresponding to the decided symbol
rate.

25 9. A base station apparatus having an interference
signal canceling apparatus, said interference signal
canceling apparatus comprising:

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a correlation value calculator for calculating a correlation value per symbol for each of symbol rates that becomes candidates of a specified symbol rate with respect to a received signal of the specified symbol rate;

5 a decider for deciding a symbol rate of the received signal based on a plurality of obtained correlation values; and

10 a generator for generating a replica signal by providing the decided signal with spreading processing with a spreading code corresponding to the decided symbol rate.

10. An interference signal canceling method comprising the steps of:

15 calculating a correlation value per symbol for each of symbol rates that becomes candidates of a specified symbol rate with respect to a received signal of the specified symbol rate;

20 deciding a symbol rate of the received signal based on a plurality of obtained correlation values; and

generating a replica signal by providing the decided signal with spreading processing with a spreading code corresponding to the decided symbol rate.

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